A Golden Ratio Activity

A GOLDEN GREEK FACE

Toolbox: Calculator; metric ruler (measures to mm)

Statues of human bodies considered most perfect by the Greeks had many Golden Ratios. It turns out that the "perfect" (to the Greeks) human face has a whole flock of Golden Ratios as well.

You'll be measuring lengths on the face of a famous Greek statue (with a broken nose) by using the instructions on this page. Before you start, notice that near the face on the second page are names for either a location on the face or a length between two places on the face. Lines mark those lengths or locations exactly.

Using your cm/mm ruler and the face picture on the next page, find each measurement below to the nearest millimeter, that is tenth of a cm or .1cm (___.__ cm). Remember, you are measuring the **distance** or **length** between the **two locations** mentioned. You can use the marking lines to place the ruler for your measurements. Fill in this table.

a = Top-of-head to chin = ___.__ cm
b = Top-of-head to pupil = ___.__ cm
c = Pupil to nosetip = ___.__ cm
d = Pupil to lip = ___.__ cm
e = Width of nose = ___.__ cm
f = Outside distance between eyes = ___.__ cm
g = Width of head = ___.__ cm
h = Hairline to pupil = ___.__ cm
i = Nosetip to chin = ___.__ cm
j = Lips to chin = ___.__ cm
k = Length of lips = ___.__ cm
l = Nosetip to lips = ___.__ cm

Now **use these letters** and go on to the next page to compute **ratios** with them with your calculator. Remember: a/g, the first one, means find measurement **a** divided by measurement **g** as a **rounded-off 3-decimal-place** value.

Now, find these ratios to three decimal places, using your calculator:

$$\frac{a}{g} = \frac{\text{cm}}{\text{cm}} = \_\_\_\_$$

$$\frac{b}{d} = \frac{\text{cm}}{\text{cm}} = \_\_\_\_$$

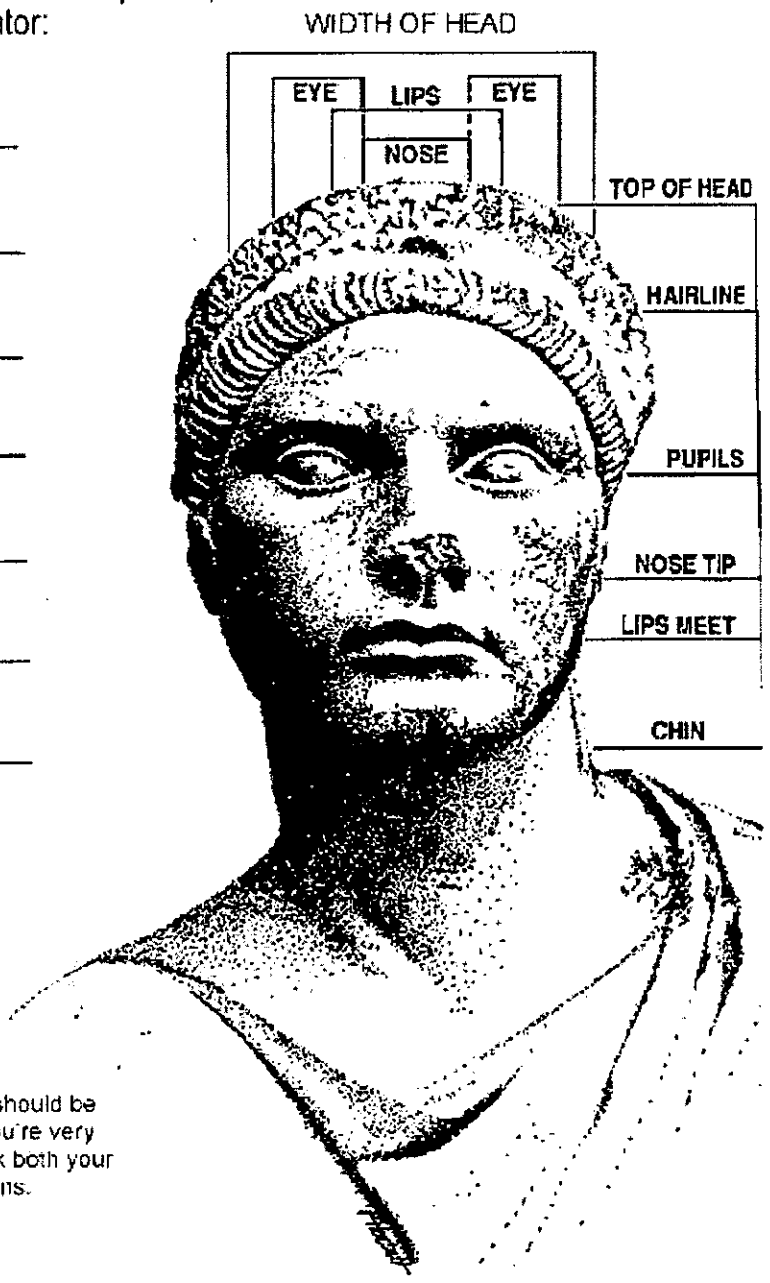
$$\frac{i}{j} = \frac{\text{cm}}{\text{cm}} = \_\_\_\_$$

$$\frac{i}{c} = \frac{\text{cm}}{\text{cm}} = \_\_\_\_$$

$$\frac{e}{l} = \frac{\text{cm}}{\text{cm}} = \_\_\_\_$$

$$\frac{f}{h} = \frac{\text{cm}}{\text{cm}} = \_\_\_\_$$

$$\frac{k}{e} = \frac{\text{cm}}{\text{cm}} = \_\_\_\_$$



Your answers to the above ratios should be near the Golden Ratio, 1.618. If you're very far off on any one of them, recheck both your measurements and your calculations.